

Science Safety Security – Finding the Balance Together

All over the world, scientists work daily in laboratories to find cures for diseases, improve human, animal, and plant health, and better understand infectious agents and toxins. As with all professions, laboratory workers face specific risks in their daily work, which can vary greatly from project to project. Scientists apply the principles of biosafety and follow them carefully to ensure the safety of people inside and outside the laboratory and the safety of the environment.

Biosafety is the use of [specific practices](#), [safety equipment](#) and [specially designed buildings](#) to ensure that workers, the community, and the environment are protected from infectious agents and toxins and biological hazards. A biosafety program will identify biological hazards, measure the level of health-related risks the biological hazards present, and identify ways to reduce the health-related risks associated with the biological hazards.

Biocontainment is the use of work practices, safety equipment, and engineering systems to prevent the accidental release of infectious agents and toxins into the environment. Biocontainment controls may include the use of [biosafety cabinets](#), [personal protective equipment](#), air filtration, or other mechanisms.

[Biocontainment](#) prevents an infectious agents and toxins both from reaching laboratory workers and from leaving the lab environment.

The Occupational Safety and Health Administration (OSHA) has released several workplace [standards related to biosafety](#) to promote a safe working environment. Examples include:

- The Bloodborne Pathogens Standard,
- The Hazard Communication Standard, and
- The Personal Protective Equipment (PPE) Standard

The underlying principle in OSHA's General Duty Clause is that an employer shall "furnish to each of his employees employment and a place of employment which are free from recognized hazards that cause or are likely to cause death or serious physical harm to his employees." Regardless of industry or specific hazard, this principle can lead to the development of biosafety and biocontainment protocols to protect scientists and other workers in the laboratory.

For more information, please see the [Biosafety Frequently Asked Questions](#).